

REMARKS

In view of the above amendments and the following remarks, reconsideration of this application is respectfully requested.

Upon entry of the amendments presented herein, claims 1-20 will be pending. Claims 1-14 stand withdrawn as being directed to non-elected subject matter. Applicants reserve the right to pursue the subject matter of the non-elected claims in this or a later-filed continuing or divisional application. Applicants also reserve their right to rejoinder of the withdrawn process claims pursuant to MPEP § 821.04 upon notification of an allowable product claim. In view of applicants' provisional election of "cappaprenol 12" and "palmitic acid" as the species of cappaprenol and fatty acid, respectively, applicants reiterate that, upon allowance of a generic claim, applicants are entitled to claim additional non-elected species that fully embrace the allowed generic claim.

Claim 15 is hereby amended. In particular, claim 15 has been amended to recite that the claimed composition "is produced by a process comprising: providing flower buds of *Capparis spinosa* and performing a supercritical fluid extraction of said flower buds to yield said composition." Support for this amendment is found throughout the originally filed specification, including, without limitation, at page 2, lines 4-7 and 11-14. Claim 16 has been amended to depend from claim 15. No new matter has been added by way of these amendments.

Rejection Under 35 U.S.C. § 103

Claims 15-20 are rejected under 35 U.S.C. § 103(a) for alleged obviousness over U.S. 2003/0091518 A1 to Pauly et al. ("*Pauly*") in view of Al-Said et al., "Isolation and Identification of an Anti-Inflammatory Principle from *Capparis spinosa*," *Pharmazie* 43:640-641 (1988) ("*Al-Said*").

In view of the above amendments and the following remarks, applicants respectfully submit that this rejection is traversed and should be withdrawn.

As discussed herein above, claim 15 has been amended to specify that the claimed composition is produced by "supercritical fluid extraction" of "flower buds of *Capparis spinosa*." Claim 16 has been amended to depend from claim 15. Therefore, claims 16-20 all

directly depend from currently amended independent claim 15. Thus, in order to read on the claimed invention of claims 15-20, the cited prior art must at least teach or suggest the use of supercritical fluid extraction of *Capparis spinosa* flower buds to arrive at a composition containing both cappaprenol-12 and palmitic acid. However, nowhere does *Pauly* or *Al-Said*, alone or in combination, even mention or suggest supercritical fluid extraction, let alone the use of flower buds of *Capparis spinosa* in any such extraction procedure to yield the claimed composition.

Therefore, applicants respectfully submit that the current obviousness rejection is traversed in view of the amendments to claims 15 and 16. Nevertheless, in order to demonstrate the deficiencies of the cited prior art, applicants provide further argument below.

Pauly describes a cosmetic or pharmaceutical composition that contains a *Brassicaceae* extract. More particularly, *Pauly* is limited in that it only enables an extract of broccoli. Further, *Pauly* teaches that this broccoli extract must contain mixtures of glucosinolate/glucoraphanin and isothiocyanate/sulforaphane (see paragraphs 0009, 0012, 0066, and 0135-0138; see also claims 3-5 and 21). As set forth below, *Pauly* is readily distinguishable from the claimed composition of the present invention, and therefore cannot be used to support the current obviousness rejection.

Unlike the claims of the present invention, as amended, nowhere does *Pauly* teach or suggest the use of flower buds of *Capparis spinosa* as a source of the extract used in the composition. Instead, *Pauly* only provides an enabling disclosure for broccoli extracts. Although the Examiner has cited paragraph 0011 of *Pauly* as disclosing “capers,” it is clear that this paragraph of *Pauly* is merely listing a litany of alleged members of the *Brassicaceae* family. However, even in presenting this list, *Pauly* incorrectly includes “capers” as falling under the *Brassicaceae* family. The Examiner presumably has concluded that “capers” is synonymous with *Capparis spinosa*. Even if this were the correct presumption, it is well known in the art that *Capparis spinosa* belongs to the *Capparaceae* family, **not** to the *Brassicaceae* family. Therefore, the inclusion of “capers” in the litany of *Brassicaceae* family members is suspect and should carry little, if any, weight as enabling an extract of *Capparis spinosa*.

Pauly also teaches away from the present invention, in that *Pauly* expressly teaches that its *Brassicaceae*/broccoli extracts contain mixtures of glucosinolate/glucoraphanin

and isothiocyanate/sulforaphane. In contrast, the specification of the present invention expressly identifies the presence of glucosinolates and isothiocyanates as *undesirable molecules* and *incompatible* for use in cosmetic applications (*see* Specification, at page 1, line 21-27). As a point of novelty and nonobviousness, the present invention recognizes that using the supercritical fluid extraction procedure overcomes the undesired presence of glucosinolates and isothiocyanates in the *Capparis spinosa* extracts (*see* Specification, at page 2, lines 4-7, page 9, lines 6-11). Therefore, given the absence of any teaching in *Pauly* of supercritical fluid extraction, one of ordinary skill in the art would not reasonably use the teachings of *Pauly* to guide the preparation of a supercritical fluid extract from flower buds of *Capparis spinosa*, as claimed in the prevent application.

Pauly also is deficient in that, unlike the claims of the present invention, *Pauly* fails to teach or even suggest cappaprenol, let alone cappaprenol-12 in combination with palmitic acid. In fact, the Examiner acknowledges that *Pauly* does not teach a composition that contains cappaprenol (i.e., cappaprenol-12) and is free of glucosinate (Office Action, at page 3).

In support of the obviousness rejection, the Examiner purports to characterize *Pauly* as teaching a cosmetic composition having anti-inflammatory properties (citing paragraph 0005), where the composition is an extract from capers (citing paragraph 0011) in combination with an oil component such as a fatty acid (citing paragraph 0016), where the weight of oil is 1 to 99% (citing paragraph 0019), and where the fatty acid can be palmitic acid (citing paragraph 0059). Applicants respectfully assert that the Examiner's interpretation mischaracterizes the teachings of *Pauly* in important ways, where the proper characterization clearly weighs in favor of nonobviousness.

For example, the Examiner is incorrect in citing paragraph 0016 of *Pauly* as teaching that the broccoli extract can be combined with an oil component such as a "fatty acid" (*see* Office Action, at page 3). Paragraph 0016 of *Pauly* **does not** list fatty acids as one of the oil components that can be combined with the broccoli extract. Instead, paragraph 0016 of *Pauly* lists the various oil components as including: Guerbet alcohols based on fatty alcohols; esters of fatty acids with various; and triglycerides based on fatty acids. These are well known in the art as not being fatty acids.

The only mention of palmitic acid is in paragraph 0059 of *Pauly*, where it is listed as a possible “chelator.” Yet, unlike the claimed composition of the present invention, *Pauly* does not include any mention or suggestion of combining a palmitic acid chelator with a cappaprenol such as cappaprenol-12.

As discussed in more detail below, the teachings and suggestions of *Al-Said* do nothing to overcome the many deficiencies of *Pauly*.

Al-Said teaches the isolation of various homologous polyprenols from *Capparis spinosa*, including cappaprenol-12, cappaprenol-13, and cappaprenol-14. The isolation method of *Al-Said* involves, **exclusively**, alcoholic extraction of dried, powdered leaves of *Capparis spinosa* (page 640, right column, section 3.1; page 641, left column, section 3.3). *Al-Said* in no way teaches or suggests, alone or in combination with *Pauly*, the composition of the claimed invention.

For example, the rejected claims of the present invention, as amended, are directed to a composition that is prepared by “performing a supercritical fluid extraction” of the flower buds of *Capparis spinosa*. In contrast, as already noted, *Al-Said* involves extraction of dried and powdered **leaves** (not flower buds) of *Capparis spinosa*.

Further, the extraction method used by *Al-Said* is completely different from that of the claims of the present invention. While the claims of the present invention require supercritical fluid extraction, *Al-Said* is limited to alcoholic extraction. This is a key distinction that the present application explicitly addresses. In particular, in discussing the “Background Art,” the specification of the present application clearly points out the **disadvantages** of using an alcoholic extraction procedure (such as in *Al-Said*) for preparing extracts of *Capparis spinosa*:

Unlike alcoholic extracts, aqueous extracts do not contain cappaprenol and are therefore less active. **Alcoholic extracts**, however, have the **disadvantage** of containing a **large amount of undesirable molecules (glucosinolates)** which, after enzymatic hydrolysis, give D-glucose-type molecules, sulphate ions, and sulphur and/or nitrosated compounds such as thiocyanates, **isothiocyanates** or oxazolidinethiones, giving the extract a **pungent odour**. In other terms, the extracts proposed in these documents are **incompatible with cosmetic applications**.

(Specification, at page 1, lines 21-27) (emphasis added). In making this distinction, the present application describes the disadvantages of using alcoholic extracts of *Capparis spinosa* for cosmetic applications; namely, that the presence of undesirable glucosinolates and isothicyantes (e.g., sulforophane) in the alcoholic extracts of *Capparis spinosa* give off a pungent odor that is incompatible with cosmetic uses.

In view of the foregoing, applicants respectfully assert that it is unreasonable to conclude that one of ordinary skill in the art would seek to combine the alcoholic extraction method of *Capparis spinosa* as taught in *Al-Said* in combination with the teachings of *Pauly* to yield the claimed composition of the present invention. Even if one of ordinary skill in the art were to combine these teachings, such combination would not lead to the present invention, because neither *Pauly* nor *Al-Said* even teaches or suggests the use of supercritical fluid extraction.

Another key distinction is that the combined teachings of *Pauly* and *Al-Said* require that the cappaprenol be combined with a fatty acid in order to arrive at the claimed invention. More particularly, *Pauly* and *Al-Said* teach, at best, that one component (e.g., cappaprenol) must be **added** to the other component (e.g., fatty acid) in order to arrive at a composition that contains both cappaprenol and a fatty acid. In contrast, the claims, as amended, do not require combining the cappaprenol component with an oil component such as a fatty acid. Instead, the supercritical extraction of flower buds of *Capparis spinosa* yields the composition *per se* (i.e., cappaprenol **plus** fatty acid), without requiring the addition of one component to the other component.

For the reasons set forth above, applicants respectfully submit that the rejection of claims 15-20 for obviousness over *Pauly* in view of *Al-Said* is improper and should be withdrawn.

CONCLUSION

Claims 1-20 are currently pending in this case, with claims 1-14 being withdrawn and claims 15-20 now under consideration. In view of the foregoing, applicants respectfully submit that the claims of the present application are in condition for allowance and such allowance is earnestly solicited.

If any unresolved issues remain that might prevent the prompt allowance of the present application, the Examiner is respectfully encouraged to contact the undersigned at the telephone number listed below to discuss these issues.

A one-month extension of time fee is being submitted herewith via EFS-Web. However, the Commissioner is hereby authorized to charge any fees that may have been overlooked, or to credit any overpayments of fees, to Deposit Account No. 08-1935.

Respectfully submitted,

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By: **/Andrew K. Gonsalves/**

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